Northern Territory Naturalist (2003) 17: 56-57

Species Profile: Black-footed Tree-rat

scientific name: *Mesembriomys gouldii*

family: Muridae

The Black-footed Tree-rat is an aboreal rodent confined to the tropical savannas of Cape York, the Top End of the Northern Territory and the northwest region of the Kimberley. The species is considered to be uncommon to rare in Queensland and the Kimberley, but still common within a patchy distribution in the Northern Territory (Fig. 1.). The species has not recently been recorded from eastern Arnhem Land or the Gulf of Carpentaria, suggesting there may have been some contraction in distribution.

Weighing up to 900g, the Black-footed Tree-rat is one of Australia's largest rodents. They have a robust body with grey-black fur, darker feet and large ears. Their most distinctive feature is a long tail, about 30-40cm in length, which has a brush of white hairs at the tip. Although considered to be solitary, during a recent research project a number of radio-collars on the tree-rats were gnawed, which could not have been done

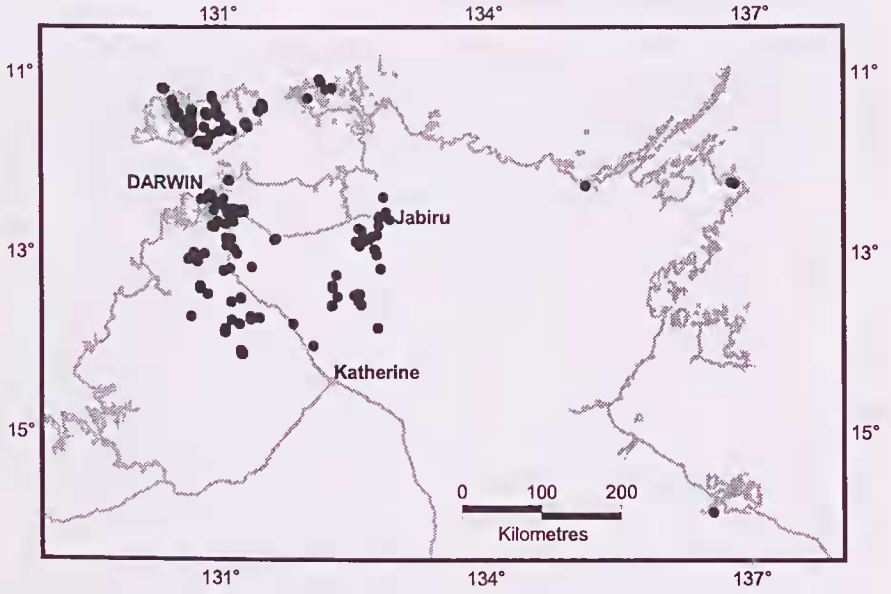

Figure 1. Distribution of the Black-footed Tree-rat in the Northern Territory (source: PWCNT fauna database).

by the collared animal. This suggests that individuals are interacting on a more regular basis than previously thought.

Breeding occurs throughout the year with a peak in the late dry season. They have a relatively long gestation period of 43-44 days, with one to three young per litter. The young grow rapidly and are weaned at approximately 4 to 5 weeks when they weigh about 400g. The male has no role in the parental care of the young.

Being nocturnal, the Black-footed Tree-rat prefers to nest in tree hollows during the day, but has also been recorded nesting in pandanus where hollows are limited. A current study near Darwin has found individuals to use between one and six different den trees, with each individual having its own set of trees. The most notable feature of den trees is their large basal diameter - the average diameter (at breast height) of den trees used by Black-footed Tree-rats in the current study is 42.4 cm.

Although their diet is not well known, Black-footed Tree-rats appear to prefer fleshy and hard fruits and seeds, with pandanus fruit being particularly favoured. Foraging both in the trees and on the ground, they can cover large distances in search of food resources. The current study has recorded them covering distances of 2km in a night. The patchy distribution of many suitable fruiting species (eg. *Pandanus, Planchonia, Terminalia, Gardenia* spp.) is believed to be one factor responsible for the patchy distribution of the tree-rats.

The Black-footed Tree-rat is one of a number of mammal species in the tropical savannas that has declined in distribution and abundance since European settlement. Speculation about the cause of this decline centers upon changes in fire regimes, with the cessation of traditional Aboriginal burning regimes and the predominance of frequent, broad-scale fires. Not only has fire been shown to greatly decrease the survival of the larger diameter trees preferred by Black-footed Tree-rats, but frequent fire also changes the structure of the midstorey, reducing the survival and abundance of many important fruiting species.

The Black-footed Tree-rat is currently the focus of a research project being undertaken by the Key Centre for Tropical Wildlife Management (Northern Territory University) and the Parks and Wildlife Commission of the Northern Territory.

The Black-footed Tree-rat is illustrated on the back cover of this edition.

Brooke Rankmore

Biodiversity Unit, Department of Infrastructure, Planning and Environment
PO Box 496, Palmerston, NT 0831